Appendix I (Updated October 2006)

Stream Habitat Designation Criteria

Cold, Cool, and Warmwater Habitat Designations

I. Fish Species Composition

Fish species commonly associated with habitat types and widely distributed within those habitat types in North Carolina:

Coldwater – brook, brown, and rainbow trout, mottled sculpin, longnose dace, blacknose dace, and central stoneroller.

Coolwater – smallmouth bass, rock bass, walleye, sauger, creek chub, river and bluehead chub, whitetail shiner, white sucker, Tennessee shiner, mirror shiner, warpaint shiner, northern hog sucker, fantail darter, greenside darter, greenfin darter.

Warmwater – largemouth bass, striped bass, Roanoke bass, white bass, black crappie, yellow perch, variety of catfish species and bullheads, redbreast sunfish, bluegill, pumpkinseed, variety of redhorse suckers, American eel, redfin pickerel, chain pickerel, golden shiner, creek chubsucker, margined madtom, pirate perch, warmouth, tessellated darter.

NOTE: These lists do not include many species with limited distributions. They are only intended to provide generalized fish community structures that would be encountered in North Carolina.

II. Temperature Regimes

Suggested temperatures thresholds conform to the generally accepted maximum temperatures that will sustain each community structure type. In reality, there is overlap in these tolerances and, in some cases; physical habitat may have a greater influence on species presence. For example, a stream may have a temperature regime suitable for trout, but high silt load or channel degradation may prevent trout from inhabiting an area. Therefore, temperature regimes alone may not be the determining factor for classifying a certain stream or stream segment. These cases would also serve to identify places where stream restoration or watershed projects would result in a given stream being able to reach its full potential in terms of fishery and other aquatic resources. Suggested temperatures thresholds are as follows:

Coldwater: Summer temperatures generally do not exceed 20 C (68F).

Coolwater: Summer temperatures generally do not exceed 25 C (76 F).

Warmwater: Summer temperatures can exceed >25 C (>76 F).

III. Geographic Guidelines

The following geographic list is intended to be a guide to the location of cold-, cool-, and warm water habitats in North Carolina. The list defines the extent of each of the habitats within each river basin to the extent possible. The delineations have been significantly refined since the original list was published in 2003. This was done to provide users more definitive guidance in determining the type of mitigation that would be required. Tributaries and headwater streams, particularly in the mountains may fall into different categories due to variations in elevation, slope, aspect, and land use within the watershed. Unless otherwise noted, the tributary streams named in the breakpoints (confluences) are classified the same as the mainstream and includes all tributaries. On streams flowing through impoundments, the classification includes the impoundment when the breakpoint point is defined as the dam; otherwise, the change occurs where the stream enters the impoundment (full pool level).

Hiwassee River Basin

Chatuge Reservoir (entire reservoir, including all tributaries except Shooting Creek) - coolwater Shooting Creek (headwaters to confluence with Rocking Chair Branch including all tributaries except Rocking Chair Branch) – coldwater

Rocking Chair Branch (headwaters to confluence with Shooting Creek including all tributaries) - coolwater Hiwassee River (Chatuge Reservoir Dam to confluence with Calhoun Branch, including Calhoun Branch and all tributaries) – coldwater

Hiwassee River (confluence with Calhoun Branch to Tennessee state line, excluding tributaries) - coolwater Hiwassee River tributaries (confluence with Calhoun Branch to Tennessee state line, except Brasstown Creek, Valley River and Nottely River) – coldwater

Brasstown Creek (Georgia state line to confluence with Hiwassee River, excluding tributaries) - coolwater Brasstown Creek tributaries (Georgia state line to confluence with Hiwassee River) – coldwater

Valley River (headwaters to confluence with Hyatt Creek, including Hyatt Creek and all tributaries) - coldwater Valley River (confluence with Hyatt Creek to confluence with Hiwassee River [Hiwassee Reservoir], excluding tributaries) - coolwater

Valley River tributaries (Hyatt Creek to Hiwassee River [Hiwassee Reservoir]) - coldwater

Nottely River (Georgia state line to confluence with Rapier Mill Creek, including all tributaries except Rapier Mill Creek) - coldwater

Rapier Mill Creek (headwaters to confluence with Nottely River) - coolwater

Nottely River (confluence with Rapier Mill Creek to confluence with Hiwassee River [Hiwassee Reservoir], including all tributaries) - coolwater

Little Tennessee River Basin

Little Tennessee River (Georgia state line to Fontana Reservoir dam, excluding tributaries) - coolwater Little Tennessee River (Fontana Reservoir dam to Tennessee state line, excluding tributaries) - coldwater

Little Tennessee River tributaries (Georgia state line to Tennessee state line including all tributaries except

Cullasaja, Nantahala, Tuckaseegee, Oconoluftee and Cheoah rivers as defined below) - coldwater

Cullasaja River (headwaters to confluence with Ellijay Creek, including all tributaries) - coldwater

Cullasaja River (confluence with Ellijay Creek to confluence with Little Tennessee River, excluding tributaries) - coolwater

Cullasaja River tributaries (Ellijay Creek to Little Tennessee River) – coldwater

Nantahala River – (headwaters to confluence with Watia Creek [Fontana Reservoir], including all tributaries) – coldwater

Tuckaseegee River (headwaters to confluence with Scott Creek, including Scott Creek and all tributaries) – coldwater

Tuckaseegee River (confluence with Scott Creek to confluence with Little Tennessee River [Fontana Reservoir], excluding tributaries) – coolwater

Tuckaseegee River tributaries (confluence with Scott Creek to confluence with Little Tennessee River [Fontana Reservoir], except Oconaluftee River) - coldwater

Oconoluftee River (headwaters to Adams Creek, including Adams Creek and all tributaries) - coldwater

Oconoluftee River (confluence with Adams Creek to confluence with Tuckaseegee River, excluding tributaries) – coolwater

Oconoluftee River tributaries (confluence with Adams Creek to confluence with Tuckaseegee River) - coldwater

Cheoah River (headwaters to confluence with Santeetlah Reservoir [Mountain Creek], including all tributaries except Santeetlah Reservoir) – coldwater (Note: Cheoah River is formed by the confluence of Tulula Creek and Sweetwater Creek and are included in this classification.)

Cheoah River (Santeetlah Reservoir [Mountain Creek] to confluence with Little Tennessee River, excluding tributaries) – coolwater

Cheoah River tributaries (Santeetlah Reservoir [Mountain Creek] to confluence with Little Tennessee River) - coldwater

Tellico River (headwaters to Tennessee state line, including all tributaries) – coldwater

Savannah River Basin

All streams - coldwater

French Broad River Basin

French Broad River (headwaters to confluence with Nicholson Creek, including Nicholson Creek and all tributaries) – coldwater

French Broad River (confluence with Nicholson Creek to Tennessee state line, including tributaries except as defined below) – coolwater

Davidson River (headwaters to confluence with French Broad River, including all tributaries) – coldwater Little River (headwaters to confluence with Tom Creek including Tom Creek and all tributaries) – coldwater Little River (confluence with Tom Creek to confluence with French Broad River, excluding tributaries) – coolwater

Little River tributaries (confluence with Tom Creek to confluence with French Broad River) - coldwater Boylston Creek (headwaters to confluence with Sweetwater Branch, including all tributaries except Sweetwater Branch) - coldwater

Sweetwater Branch (headwaters to confluence with Boylston Creek including all tributaries) - coolwater Boylston Creek (confluence with Sweetwater Branch to confluence with French Broad River, including all tributaries) - coolwater

Mills River (confluence of North Fork Mills River and South Fork Mills River to confluence with French Broad River, including all tributaries except North Fork Mills River and South Fork Mills River) - coolwater North Fork Mills River (headwaters to confluence with South Fork Mills River [origin of Mills River], including all tributaries) - coldwater

South Fork Mills River (headwaters to confluence with North Fork Mills River [origin of Mills River], including all tributaries) - coldwater

Mud Creek (headwaters to confluence with French Broad River, including all tributaries except Clear Creek) – coolwater

Clear Creek (headwaters to confluence with Harper Creek, including Harper Creek and all tributaries) – coldwater

Clear Creek (confluence with Harper Creek to confluence with Mud Creek, including all tributaries) - coolwater

Cane Creek (headwaters to confluence with Merrill Cove Creek including Merrill Cove Creek and all tributaries) – coldwater

Cane Creek (confluence with Merrill Cove Creek to confluence with French Broad River, including all tributaries except Hoopers Creek) - coolwater

Hoopers Creek (headwaters to confluence with Cane Creek, including all tributaries) - coldwater Bent Creek (headwaters to confluence with French Broad River including all tributaries) - coldwater Hominy Creek (headwaters to confluence with French Broad River, including all tributaries except South Hominy Creek) – coolwater

South Hominy Creek (headwaters to confluence with Hominy Creek including all tributaries) – coldwater Swannanoa River (headwaters to confluence with Haw Creek, including Haw Creek and all tributaries) – coldwater

Swannanoa River (confluence with Haw Creek to confluence with French Broad River, including all tributaries) – coolwater

Reems Creek (headwaters to confluence with French Broad River including all tributaries) - coldwater Ivy Creek (headwaters to confluence with Little Ivy Creek, including Little Ivy Creek and all tributaries) - coldwater

Ivy Creek (confluence with Little Ivy Creek to confluence with French Broad River including all tributaries) – coolwater

Little Pine Creek (headwaters to confluence with French Broad River including all tributaries) – coldwater Big Pine Creek (headwaters to confluence with French Broad River including all tributaries) – coldwater Big Laurel Creek (headwaters to confluence with Little Hurricane Creek including Little Hurricane Creek and all tributaries) – coldwater

Big Laurel Creek (confluence with Little Hurricane Creek to confluence with French Broad River including all tributaries) – coolwater

Spring Creek (headwaters to confluence with French Broad River including all tributaries) - coldwater Shut-In Creek (headwaters to confluence with French Broad River including all tributaries) - coldwater

Pigeon River (confluence of East Fork Pigeon River and West Fork Pigeon River to Tennessee state line, excluding East Fork Pigeon River and West Fork Pigeon River and all tributaries) – coolwater East Fork Pigeon River (headwaters to confluence with West Fork Pigeon River forigin of Pigeon River)

East Fork Pigeon River (headwaters to confluence with West Fork Pigeon River [origin of Pigeon River] including all tributaries) - coldwater

West Fork Pigeon River (headwaters to confluence with East Fork Pigeon River [origin of Pigeon River] including all tributaries) – coldwater

Pigeon River tributaries (confluence of East Fork Pigeon River and West Fork Pigeon River to Tennessee state line, except Jonathan Creek) - coldwater

Jonathan Creek (headwaters to confluence with Beantown Creek, including Beantown Creek and all tributaries) – coldwater

Jonathan Creek (confluence with Beantown Creek to confluence with Pigeon River, excluding tributaries) – coolwater

Jonathan Creek tributaries (confluence with Beantown Creek to confluence with Pigeon River) - coldwater

Nolichucky River (confluence of North Toe River and Cane River to Tennessee state line, excluding tributaries) – coolwater

Nolichucky River tributaries (confluence of North Toe River and Cane River to Tennessee state line) - coldwater

North Toe River (headwaters to confluence with Gouges Creek, including Gouges Creek and all tributaries) - coldwater

North Toe River (confluence with Gouges Creek to confluence with Cane River [origin of Nolichucky River], excluding tributaries) – coolwater

North Toe River tributaries (confluence with Gouges Creek to confluence with Cane River [origin of Nolichucky River], except Cane River and South Toe River) – coldwater

South Toe River (headwaters to confluence with Murphy Branch, including Murphy Branch and all tributaries) – coldwater

South Toe River (confluence with Murphy Branch to confluence with North Toe River, excluding tributaries) – coolwater

South Toe River tributaries (confluence with Murphy Branch to confluence with North Toe River) - coldwater

Cane River (headwaters to confluence with Baker Creek, including Baker Creek and all tributaries) – coldwater

Cane River (confluence with Baker Creek to confluence with Nolichucky River, excluding tributaries) – coolwater

Cane River tributaries (confluence with Baker Creek to confluence with Nolichucky River) - coldwater

Broad River Basin

Broad River (headwaters to Lake Lure dam, including all tributaries) – coldwater

Broad River (Lake Lure dam to confluence with Green River, including all tributaries except Cove Creek) – coolwater

Cove Creek (headwaters to Otter Creek, including Otter Creek and all tributaries) - coldwater

Cove Creek (confluence with Otter Creek to confluence with Broad River, including all tributaries except Cedar Creek) – coolwater

Cedar Creek (headwaters to confluence with Cove Creek including all tributaries) - coldwater

Broad River (confluence with Green River to confluence with First Broad River, including all tributaries except Green River and First Broad River) – coolwater

Green River (headwaters to confluence with Brights [Rash] Creek, including Brights [Rash] Creek and all tributaries) – coldwater

Green River (confluence with Brights [Rash] Creek to confluence with Broad River, including all tributaries except Ostin Creek) – coolwater

Ostin Creek (headwaters to confluence with Green River [Lake Adger]) - coldwater

Broad River (confluence with First Broad River to South Carolina State line, including all tributaries except First Broad River) – warmwater

First Broad River (headwaters to confluence with North Fork First Broad River, including North Fork First Broad River and all tributaries) – coldwater

First Broad River (confluence with North Fork First Broad River to confluence with No Business Creek, including No Business creek and all tributaries except Brier Creek) – coolwater

Brier Creek (headwaters to confluence with Pheasant Creek, including Pheasant Creek and all tributaries) – coldwater

Brier Creek (confluence with Pheasant Creek to confluence with First Broad River, including all tributaries) - coolwater

First Broad River (confluence with No Business Creek to confluence with Broad River, including all tributaries) - warmwater

North Pacolet River – (headwaters to Skyuka Creek, including Skyuka Creek and all tributaries) – coldwater North Pacolet River – (confluence with Skyuka Creek to South Carolina state line, including all tributaries) – coolwater

Catawba River Basin

Catawba River (headwaters to confluence with Curtis Creek, including Curtis Creek and all tributaries) – coldwater

Catawba River (confluence with Curtis Creek to Lake James dam, including tributaries except Mackey Creek and Buck Creek) – coolwater

Mackey Creek (headwaters to confluence with Catawba River including all tributaries) – coldwater

Buck Creek (headwaters to Lake Tahoma dam, including all tributaries) - coldwater

Buck Creek (Lake Tahoma dam to confluence with Catawba River, including all tributaries) - coolwater

Catawba River tributaries to Lake James (except North Fork Catawba River and Linville River) - coolwater North Fork Catawba River (headwaters to confluence with Armstrong Creek, including Armstrong Creek and all tributaries) - coldwater

North Fork Catawba River (confluence with Armstrong Creek to confluence with Catawba River [Lake James], including all tributaries) -coolwater

Linville River (headwaters to confluence with Chimney Branch, including Chimney Branch and all tributaries) - coldwater

Linville River (confluence with Chimney Branch to confluence with Catawba River [Lake James], including all tributaries) – coolwater

Catawba River (Lake James dam to confluence with Silver Creek, excluding Silver Creek and all tributaries) – coldwater

Catawba River (confluence with Silver Creek to confluence with Johns River [Lake Rhodhiss], excluding all tributaries) – coolwater

Catawba River tributaries (Lake James dam to confluence with Johns River [Lake Rhodhiss], excluding Warrior Fork and Johns River) – warmwater

Warrior Fork (headwaters to confluence with Catawba River, except Steels, Upper and Irish creeks) – coolwater Steels Creek (headwaters to confluence with Upper Creek, including all tributaries) – coldwater

Upper Creek (headwaters to confluence with Steels Creek, including all tributaries) - coldwater

Irish Creek (headwaters to confluence with Roses Creek, including Roses Creek and all tributaries) – coldwater

Irish Creek (confluence with Roses Creek to confluence with Johns River, including all tributaries) – coolwater

Johns River (headwaters to confluence with Reids Creek, including Reids Creek and all tributaries) - coldwater Johns River (confluence of Reids Creek to confluence with Catawba River, excluding tributaries) - coolwater Johns River tributaries (confluence with Reids Creek to confluence with Wilson Creek, except Wilson Creek) - coldwater

Wilson Creek (headwaters to confluence with Carroll Mill Creek, including Carroll Mill Creek and all tributaries) – coldwater

Wilson Creek (confluence with Carroll Mill Creek to confluence with Johns River, excluding tributaries) – coolwater

Wilson Creek tributaries (confluence with Carroll Mill Creek to confluence with Johns River) – coldwater Johns River tributaries (confluence with Wilson Creek to confluence with Catawba River [Lake Rhodhiss]) - coolwater

Catawba River (confluence with Johns River to South Carolina state line including all tributaries, except South Fork Catawba River) – warmwater

South Fork Catawba River (confluence of Henry Fork and Jacob Fork to confluence with Catawba River, except Henry Fork, Jacob Fork and Little River) - warmwater

Henry Fork (headwaters to confluence with Ivy Creek, including Ivey Creek and all tributaries) – coldwater Henry Fork (confluence with Ivy Creek to confluence with Jacob Fork [origin of South Fork Catawba River], including all tributaries - coolwater

Jacob Fork (headwaters to confluence with Little River, including all tributaries except Little River) – coldwater

Little River (headwaters to confluence with Jacob Fork including all tributaries) – coolwater Jacob Fork (confluence with Little River to confluence with Henry Fork [origin of South Fork Catawba River], including all tributaries) – coolwater

Watauga River Basin

Watauga River (headwaters to confluence with Laurel Fork, including Laurel Fork and all tributaries) - coldwater Watauga River (confluence with Laurel Fork to Tennessee state line, excluding tributaries) - coolwater Watauga River tributaries (confluence with Laurel Fork to Tennessee state line) - coldwater Elk River (headwaters to Tennessee state line, including all tributaries) - coldwater

New River Basin

North Fork New River (headwaters to confluence with Sugar Tree Branch, including Sugar Tree Branch and all tributaries) – coldwater

North Fork New River (confluence with Sugar Tree Branch to confluence with New River, excluding tributaries) – coolwater

North Fork New River tributaries (confluence with Sugar Tree Branch to confluence with New River) – coldwater

South Fork New River (confluence of East Fork [of the South Fork] New River and Middle Fork [of the South Fork] New River to confluence with New River, excluding East Fork New River, Middle Fork New River and all tributaries) – coolwater

East Fork [of the South Fork] New River (headwaters to confluence with Middle Fork [of the South Fork] New River including all tributaries) - coldwater

Middle Fork [of the South Fork] New River (headwaters to confluence with East Fork [of the South Fork] New River including all tributaries) - coldwater

South Fork New River tributaries (confluence of East Fork [of the South Fork] New River and Middle Fork [of the South Fork] New River to confluence with New River) – coldwater

New River (all North Carolina portions downstream of the confluence of the North Fork New River and South Fork New River, excluding tributaries) – coolwater

New River tributaries, (all portions in North Carolina downstream of the confluence of the North Fork New River and South Fork New River, except Little River) – coldwater

Little River (headwaters to confluence with Moccasin Creek, including Moccasin Creek and all tributaries) – coldwater

Little River (confluence with Moccasin Creek to confluence with New River [all portions in North Carolina], excluding tributaries) - coolwater

Little River tributaries (confluence with Moccasin Creek to confluence with New River [all portions in North Carolina]) - coldwater

Yadkin/Pee Dee River Basin

Yadkin River (headwaters to Jackson Camp Creek, including Jackson Camp Creek and all tributaries) – coldwater Yadkin River (Jackson Camp Creek to W. Kerr Scott Reservoir dam, including all tributaries, except as defined below) – coolwater

Yadkin River Tributaries

Buffalo Creek (headwaters to confluence with Joes Creek, including Joes Creek and all tributaries) – coldwater

Buffalo Creek (confluence with Joes Creek to confluence with Yadkin River, including all tributaries) – coolwater

Elk Creek (headwaters to confluence with Dugger Creek, including Dugger Creek and all tributaries) – coldwater

Elk Creek (confluence with Dugger Creek to confluence Yadkin River, including all tributaries) - coolwater Stony Fork (headwaters to confluence with Left Prong Stony Fork, including Left Prong Stony Fork and all tributaries) - coldwater

Stony Fork (confluence with Left Prong Stony Fork to confluence with Yadkin River [W. Kerr Scott Reservoir]) – coolwater

South Prong Lewis Fork (headwaters to confluence with Pumpkin Run, including Pumpkin Run and all tributaries) – coldwater

South Prong Lewis Fork (confluence with Pumpkin Run to confluence with North Prong Lewis Fork, including all tributaries) – coolwater

North Prong Lewis Fork (headwaters to confluence with Little Fork Creek, including Little Fork Creek and all tributaries) – coldwater

North Prong Lewis Fork (confluence with Little Fork Creek to confluence with South Prong Lewis Fork, including all tributaries) - coolwater

Lewis Fork (confluence of South Prong Lewis Fork and North Prong Lewis Fork to Yadkin River [W. Kerr Scott Reservoir]) - coolwater

Yadkin River (W. Kerr Scot Reservoir dam to confluence with Ararat River including all tributaries, except as defined below) – coolwater

Yadkin River tributaries (W. Kerr Scott dam to confluence with Ararat River)

Reddies River (headwaters to confluence with North Fork Reddies River, including Middle Fork Reddies River, South Fork Reddies River and all tributaries) – coldwater

Reddies River (confluence with North Fork Reddies River to confluence with Yadkin River, including all tributaries) – coolwater

Mulberry Creek (headwaters to confluence with Dungeon Creek, including Dungeon Creek and all tributaries) – coldwater

Mulberry Creek (confluence with Dungeon Creek to confluence with Yadkin River) - coolwater

West Prong Roaring River (headwaters to confluence with Pike Creek, including Pike Creek and all tributaries) – coldwater

West Prong Roaring River (confluence with Pike Creek to confluence with Middle Prong Roaring River) – coolwater

Middle Prong Roaring River (headwaters to confluence with Double Creek, including Double Creek and all tributaries) – coldwater

Middle Prong Roaring River (confluence with Double Creek to confluence with East Prong Roaring River, including all tributaries except West Prong Roaring River and East Prong Roaring River) – coolwater

East Prong Roaring River (headwaters to Big Sandy Creek, including Big Sandy Creek and all tributaries) – coldwater

East Prong Roaring River (confluence with Big Sandy Creek to confluence with Middle Prong Roaring River) – coolwater

Roaring River (confluence of Middle Prong Roaring River and East Prong Roaring River to confluence with Yadkin River, including all tributaries) – coolwater

Mitchell River (headwaters to confluence with Pine Branch, including all tributaries except Pine Branch) – coldwater

Mitchell River (confluence with Pine Branch to confluence with Yadkin River, including Pine Branch and all tributaries except South Fork Mitchell River) – coolwater

South Fork Mitchell River (headwaters to confluence with Flat Branch, including all tributaries except Flat Branch) – coldwater

South Fork Mitchell River (confluence with Flat Branch to confluence with Mitchell River including Flat Branch and all tributaries) – coolwater

Fisher River (Virginia state line to confluence with Red Hill Creek, including Red Hill Creek and all tributaries) – coldwater

Fisher River (confluence with Red Hill Creek to confluence with Yadkin River, including all tributaries) – coolwater

Little Fisher River (Virginia state line to confluence with Beaverdam Creek, including Beaverdam Creek and all tributaries) – coldwater

Little Fisher River (confluence with Beaverdam Creek to confluence with Fisher River, including all tributaries) – coolwater

Ararat River (headwaters to confluence with Johnson Creek, including Johnson Creek and all tributaries) – coldwater

Ararat River (confluence with Johnson Creek to confluence with Yadkin River, including all tributaries) – coolwater

Yadkin River (confluence with Mitchell River to confluence with Uwharrie River [Lake Tillery], including Uwharrie River and all tributaries) – warmwater

Pee Dee River (confluence of the Yadkin River and Uwharrie River [in Lake Tillery] to the South Carolina state line, including all tributaries) - warmwater

Lumber River Basin – (includes Lockwood Folly River and Shallotte River watersheds) - all streams classified as warmwater

Cape Fear River Basin – all streams classified as warmwater

White Oak River Basin (includes Newport River and New River [Onslow County] watersheds and all tributaries) – all stream classified as warmwater

Neuse River Basin – all streams classified as warmwater

Tar-Pamlico River Basin – (includes Pungo River watershed) - all streams classified as warmwater

Roanoke River Basin

Dan River (North Carolina portions from the Virginia state line to the confluence with Little Dan River, including tributaries except Little Dan River) – coldwater

Little Dan River (North Carolina portions from Virginia state line to confluence with Dan River, including all tributaries) - coolwater

Dan River (confluence with Little Dan River to confluence with Scott Branch, including Scott Branch and all tributaries) – coolwater

Dan River (all North Carolina portions downstream from confluence with Scott Branch, including all tributaries) - warmwater

Chowan River Basin – all streams classified as warmwater

Pasquotank River Basin – (includes North River watershed) – all stream classified as warmwater